heated to boiling and poured into a boiling mixture of 50 c.c. of 20% ammonium chloride solution and 50 c.c. of 50% ammonium acetate solution. The precipitate of lead molybdate is collected, washed with hot water, dried, ignited, and weighed. The weight of the precipitate multiplied by 0·0159 gives the quantity of P_2O_5. If 5 c.c. of phosphate solution were added, 1 mgrm. of P_2O_5 is deducted from the result. The method may be employed for the determination of quantities of P_2O_5 as small as 0·1 mgrm.—W. P. S.

Flame standards in photometry. Rosa and Crittenden. *See* IIb.

Determination of ammonia by the boric acid method. Winkler. *See* VII.

Detection of carbonic acid, especially in mixtures of carbonate and sulphite. Petersen. *See* VII.

Salts coloured by cathode rays. Goldstein. *See* VII.

Determination of nitrogen in steel. Barton. *See* X.

Analysis of platinum. Mylius and Mazzucchelli. *See* X.

Determination of copper and lead in Babbitt metal. Hagmaier. *See* X.

Influence of atmospheric conditions in the testing of sugars. Bates and Phelps. *See* XVII.

Determination of original gravity of beers by the distillation process. Thorpe and Brown. *See* XVIII.

Value of dried brewers' grains as a feeding material. Halnan. *See* XIXa.

Rapid determination of magnesium in water analysis in presence of calcium. Froboese. *See* XIXb.

Detection of oxymorphine [pseudomorphine] in presence of morphine. Grimbert and Leclère. *See* XX.

Standardisation of commercial papain. Heyl and others. *See* XX.

Rapid tests for detecting the substitution of denatured alcohol for rectified alcohol. Richard. *See* XX.

Determination of allantoin in urine in presence of dextrose. Plimmer and Skelton. *See* XX.

PATENT.

Gas-analysis apparatus; Automatic ——. C. W. Heath, Cincinnati, Ohio. U.S. Pat. 1,121,244, Dec. 15, 1914. Date of appl., Feb. 21, 1913.

The gas is drawn into a measuring vessel by the outward movement of an inert liquid separated from the driving liquid by a flexible diaphragm. The gas is then displaced through an absorbing vessel to a second measuring vessel by the inward movement of the inert liquid, the result of the analysis is automatically recorded, and the gas residue discharged.—W. F. F.

XXIV.—MISCELLANEOUS ABSTRACTS.

Chemiluminescence. S. Moeller. Archiv Pharm. Chem., **21**, 440. Pharm. J., 1915, 33.

The appearance of light has been noted in several chemical reactions, notably in that of Grignard, when an ether solution of an alkyl halide reacts with magnesium dust. A red light is developed on mixing 35 c.c. of each of the following solutions:—A 1 : 2 potassium carbonate solution, a 1 : 10 pyrogallol solution, and a 35 : 100 formaldehyde solution; then adding 50 c.c. of 30 : 100 hydrogen peroxide solution. Also phenylmagnesium bromide, in ether solution, develops an intense green light on contact with moist air. The effect is not, however, due to the moisture, but to oxidation. The luminescence is stronger in an atmosphere of pure oxygen than in other gases. Ether which has stood for some months over calcium chloride reacts well; some, but not all, specimens of official ether do so also. Chemiluminescence is observed with most organic magnesium compounds, and its intensity is directly proportional to the molecular weight of the halogen derivative.

Reductase; Action of poisons on —— and attempts to isolate this enzyme. D. F. Harris and H. J. M. Creighton. Biochem. J., 1914, **8**, 585—590.

The reductase present in pigeon's liver and muscle is soluble to some extent in 0·75 % sodium chloride solution and in a mixture of this solution with glycerol, but not in pure glycerol; all attempts to isolate the active enzyme failed. The action of a number of substances (arsenious acid, potassium cyanide, mercuric chloride, gold chloride, osmic acid, manganous chloride, formaldehyde, etc.) on the activity of the enzyme is recorded. At higher concentrations some of the substances are relatively much more poisonous than at lower concentrations. Thus, formaldehyde has no toxic action in 0·01 molar solution but is the most active poison when the concentration is increased to 0·1 molar. The action of the poisons is discussed from a physiological point of view.—W. P. S.

Hydroxides of silicon, aluminium, and iron; Adsorptive power of ——. VII. P. Rohland. Z. anorg. Chem., 1914, **89**, 164—166.

The determining factor in the adsorption of dyestuffs by colloidal clay, and also by colloidal hydrated zirconium oxide (this J., 1912, 847; 1913, 792) is the colloidal character of the dyestuff and not its acid or basic nature (compare Chapman and Siebold, this J., 1912, 808), or the number of atoms in its molecule (compare Biltz, this J., 1911, 677). For example, Vesuvin, a basic dyestuff, is only sparingly adsorbed, and Aniline Red, Malachite Green, Fluorescein, and Aurin, though having less than 55 atoms in the molecule, are all adsorbed by kaolin. The failure of Carli (Z. physik. Chem., 1913, **85**, 2) to observe appreciable adsorption of colloidal ferric hydroxide by kaolin was probably due to the use of kaolin of low plasticity. Highly plastic kaolin from Saxony adsorbs colloidal ferric hydroxide almost completely.—A. S.

Trade Report.

Competition with Germany and Austria-Hungary.

In connection with the efforts of the Board of Trade to assist British manufacturers and merchants to secure trade formerly in the hands of Germany and Austria-Hungary, lists have been prepared showing articles which a number of inquirers desire to purchase or to sell. The seventh list is now ready, and may be obtained by United Kingdom manufacturers and traders, together with copies of the previous lists (see this J., 1914, 896, 940, 1037, 1077), on application to the Board of Trade, Commercial Intelligence Branch, 73, Basinghall Street, London, E.C.

German Bureau of Chemical Technology. Chem. Trade J., Jan. 9, 1915.

THE recently organised German Advisory Bureau for Technical Subjects and Chemical Technology (Deutsche Begutachtungsstelle für Technik und Chemische Technologie) intends to open a central bureau in Hamburg to give information on all subjects connected with German manufactures and all new products put on the market. This undertaking is said to be well supported financially, and should prove very useful to German trade. Catalogues of all German manufacturers will be collected and classified. Special attention will be given to pushing German interests abroad. In carrying out this object the Advisory Committee will conduct its operations in all civilised countries. The Institute will employ a number of technical engineers and chemists, who will not only be skilled in their particular branches, but have a thorough practical knowledge of foreign languages. Care will be taken to co-operate with the manufacturing and commercial interests concerned, and to maintain the Advisory Bureau as a neutral official institution, whose opinions will be given from a strictly impartial standpoint. The institute is independent, it is asserted, of any private commercial or trade interests whatsoever.

France. Prohibited exports. Board of Trade J., Jan. 7, 1915.

A FRENCH Presidential Decree, dated the 21st December, embodies a revised list of prohibited exports. In virtue of this Decree, the exportation and re-exportation of the undermentioned articles from France is prohibited:—Acetone; acetic acid and medicinal salts thereof; nitric acid; salicylic acid; sulphuric acid; special steel; amyl, methyl and ethyl alcohols; anhydrous and hydrated alumina and salts of alumina; aluminium, ore and metal, pure or alloyed; antimony, ore and metal, pure or alloyed; antipyrine; aspirin; atropine; beetroots destined for the manufacture of sugar; bismuth and bismuth salts; rosin, colophony, oil of turpentine; bromine and bromides; caffeine; camphor; indiarubber, balata, gutta-percha, crude or melted down, including rubber waste and ebonite; calcium carbide; wood charcoal; carbons for electricity; chloral; chlorates and perchlorates; chloroform; chloride of lime; scrap and waste iron and steel; cocaine; collodion; wood creosote; copper, ore or metal, pure or alloyed, boilermakers' wares and tubes of copper; hydrogen peroxide; cinchona bark; tin, ore or metal, pure or alloyed; sulphuric and acetic ethers; ferro-chrome, ferro-nickel, and all ferro-metallic alloys; insulated wire and cable for electricity; formol; oleaginous fruits and seeds; glycerin; mineral tar and chemical products derived therefrom; animal greases (fats) other than that from fish (tallow, lard, lanoline, margarine); mineral oils, crude, refined, essences and heavy oils (petrol, benzol, toluene, etc.); castor and pulghera oils; iodine, iodides, and iodoform; condensed milk, with or without the addition of sugar; yeasts; filings and waste of copper, tin, zinc, pure or alloyed; magnesium; mercury (ore and metal); chrome, manganese and tungsten ores; iron ore; nickel, ore or metal, pure or alloyed; nitrates and nitrites; opium and preparations with base of opium; platinum; photographic plates and papers; lead, ore and metal, pure or alloyed, lead pipes; potassium, potash and potash salts; gunpowder and similar explosives (guncotton, nitrated cotton, nitroglycerin, etc.); amidopyrine (pyramidon); quinine and salts thereof; sea salt, salina salt, and rock salt, crude or refined; thorium salts, cerium salts, and other salts of rare earths; caustic soda; sulphur and pyrites; sugar, unrefined, refined, and candy; sulphonal; dyes derived from coal-tar (alizarin, aniline); theobromine; cake from oilseeds, and brewery dregs for feeding cattle; zinc, ore or metal, pure or alloyed.

Exemption from the above prohibitions, however, may be accorded, under conditions to be laid down by the Ministry of Finance. General permission has been granted for the export of iron ore to the United Kingdom.

German prohibition of exports. Chem. and Drug., Jan. 16, 1915.

THE Pharm. Zeit., in its issue of January 2, 1915, states that a new Decree of December 24, 1914, prohibits the exportation from Germany of the following medicinal and pharmaceutical products. At the same time all former Decrees are revoked:—Acetanilide; acetylsalicylic acid (aspirin); alypine; arecoline and arecoline hydrobromide; ethyl ether; ether (anæsthetic); atropine and its salts and other derivatives; bromine, bromides, hydrobromic acid, bromates, and organic bromo-compounds; cinchona-bark, quinine, quinine salts, and other quinine derivatives; chloral hydrate, methyl and ethyl chlorides in tubes and flasks; chloroform; coca-leaves, cocaine and its salts; colchicine; diethylbarbituric acid and its salts (*e.g.*, medinal); digitalis-leaves and their preparations (*e.g.*, digalen, etc.); duboisine and its salts and other compounds; eucaine; formaldehyde solution, paraformaldehyde; galls; guttapercha-tissue; ipecacuanha (also when free of emetine); iodine (crude and re-sublimed), hydriodic acid, iodides, and organic iodo-compounds; carbolic acid; rubber; codeine and its salts; caffeine and its salts, derivatives, and preparations; cresol, cresol-soap solutions, lysol; mastic and mastic preparations, such as mastisol; morphine and its salts and compounds; anæsthetic mixtures (such as Schleich, etc.); novocaine and its compounds and preparations; opium and opium-preparations (such as powdered opium), opium tinctures, opium extract; pantopon; paraffin; Peru balsam; phenacetin; proponal; dimethylaminophenyldimethyl-pyrazolone (pyramidon); phenyldimethylpyrazolone (antipyrin); phenyldimethylpyrazolone salicylate (salipyrin); mercury and mercurials and preparations, such as ointments, tablets of corrosive sublimate; castor oil; salicylic acid and its salts; salvarsan and neo-salvarsan; colchicum-seeds and preparations thereof; Schleich's solutions and Schleich's tablets for the preparation of the solutions; scopolamine (hyoscine) and its salts; suprarenine, adrenalin, paranephrine, epinephrine, epirenan, and their compounds and preparations; senega; simarubra-bark; theobromine and its salts, compounds and preparations; tropacocaine and its compounds and preparations; vaseline; veronal, veronal sodium; tartaric acid; bismuth and bismuth-compounds; wool-fat, lanoline; citric acid. A large number of articles for which the prohibition of exportation had been revoked are replaced on the list—*e.g.*, salvarsan and neo-salvarsan.

Books Received.

COPPER SMELTING INDUSTRIES OF CANADA. A. W. G. Wilson. Report No. 200. Dept. of Mines, Canada. *See* X.

INDEX TO PATENTS, TECHNOLOGY, AND BIBLIOGRAPHY OF CHINA WOOD OIL. G. H. Stevens and J. W. Armitage. *See* XII.